

REMARKS

In the Office Action mailed December 8, 2003, the Examiner acknowledged a previous election of claims 1-6 and 15-18.

The Examiner rejected claim 1 as being anticipated by U.S. Patent No. 4,550,660 to Sato et al.

The Examiner rejected claim 2 as being unpatentable for alleged obviousness based upon the '660 patent to Sato et al. in view of U.S. Patent 3,981,237 to Rhodes.

The Examiner rejected claim 3 as being anticipated by, or in the alternative, for alleged obviousness based upon the '660 patent to Sato et al.

Claim 4 was rejected for allegedly being obvious over the '660 patent to Sato et al. in view of JP 03-75192 to Tamura.

Claim 5 was rejected for alleged obviousness based upon the '660 patent to Sato et al.

Claim 6 was rejected for allegedly being obvious based upon the '660 patent to Sato et al. in view of U.S. Patent 5,819,652 to Utter et al.

The Examiner rejected claims 15 and 17 for alleged obviousness based upon the '660 patent to Sato et al. in view of the JP '192 document to Tamura.

Claim 18 was rejected for alleged obviousness based upon the '660 patent to Sato et al. in view of the '652 patent to Utter et al.

In view of the amendments and remarks set forth herein, it is respectfully submitted that claims 1-3, 5-6, 15 and 17-18 are in condition for allowance.

A. Rejection of Claim 1 Has Been Remedied and Should be Withdrawn

In support of the rejection of claim 1, the Examiner asserted:

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,550,660 to Sato et al.

Regarding applicant claim 1, Sato et al. disclose a stencil sheet comprising:

(1) A sheet having a large number of minute perforations (a 270 mesh polyester screen) which are filled with a resin that is soluble in a solvent (column 5, line 60 to column 6, line 9).

Claim 1 has been amended by incorporating the recitations from claim 4. Claim 4 has thus been deleted. Claim 1 as now amended recites that the minute perforations in the sheet are trapezoidal in vertical cross section. Additionally, claim 1 recites that the perforations are arranged such that the diameter of the space defined by each of the perforations for transferring ink onto an object to be printed is smaller toward the object to be printed. No new matter is added by this amendment since support is found

throughout the application such as at page 11, lines 18-26; originally filed claim 4; and Fig. 2.

The '660 patent entirely fails to disclose these aspects. For at least this reason, it is believed that claim 1 is allowable over the limited disclosure of the '660 patent to Sato et al.

B. Rejection of Claim 2 Should be Withdrawn

The Examiner rejected claim 2 by contending:

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,550,660 to Sato et al. in view of U.S. Patent No. 3,981,237 to Rhodes.

Although Sato et al. disclose that the stencil sheet may comprise a 270-mesh screen formed of polyester (a synthetic resin), they do not specifically disclose, as per applicant claim 2, that it comprises a film of synthetic resin.

Nonetheless, it would have been obvious to one of ordinary skill in the art at the time of invention to substitute the polyester mesh screen of Sato et al. with a perforated film of synthetic resin motivated by the fact that Rhodes, also drawn to screen printing devices, discloses that mesh screens may be replaced with perforated films of synthetic resin in order to produce a device with enhanced resistance to damage (column 1, line 15 to column 3, line 64).

Claim 2 depends from claim 1 and so, contains all of the recitations from that claim. Neither of the '660 patent to Sato et al. nor the '237 patent to Rhodes teaches or even suggests the unique trapezoidal aspects and arrangement of the perforations as recited in claim 1. For at least these reasons, claim 2 is allowable over the patents to Sato et al. and Rhodes.

C. Rejection of Claim 3 Should be Withdrawn

Claim 3 was rejected by the Examiner on grounds that:

Claim 3 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Patent No. 4,550,660 to Sato et al.

Sato et al. disclose that the sheet having a large number of minute perforations comprises a 270 mesh polyester screen. Given the mesh size disclosed by Sato et al., a standard 270-mesh polyester screen would inherently have an open area of between 26.6 and 35.2% and have an equivalent circular diameter of between 45 and 54 μm .

In the alternative, it would have been obvious to one of ordinary skill in the art at the time of invention that the 270 mesh polyester screen disclosed by Sato et al. would have the physical parameters set forth in applicant claim 3 motivated by the fact that generally available technical specifications provide that a 270 mesh polyester screen formed of low elongation monofilament polyester possesses an open area of between 26.6 and 35.2% and have an equivalent circular diameter of between 45 and 54 μm .

Claim 3 is dependent from claim 1, and so, contains all of the recitations of that claim. Specifically, the '660 patent to Sato et al. entirely fails to anticipate or teach the unique combination of aspects as now recited in claim 3, and particularly through its dependency from independent claim 1. There is absolutely no disclosure or teaching in the Sato et al. patent of providing minute perforations in the sheet which are trapezoidal in vertical cross section. Moreover, there is no disclosure or teaching of an arrangement of perforations such that the diameter of the space defined by each of the perforations for transferring ink onto an object to be printed is smaller toward the object to be printed. Furthermore, there is no disclosure or teaching of providing a combination of these features, nor the combination of these features with the aspects recited in claim 3. Since claim 1 is allowable over the limited disclosure of the '660 patent to Sato et al., so too is claim 3.

D. Rejection of Claim 4 is Moot

Claim 4 has been cancelled, and so, the rejection of this claim is moot.

E. Rejection of Claim 5 Should be Withdrawn

The Examiner rejected claim 5 by asserting:

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al.

Sato et al. disclose a stencil sheet comprising a sheet having a large number of minute perforations (a 270 mesh polyester screen) which are filled with a resin that is soluble in a solvent (column 5, line 60 to column 6, line 9).

Although Sato et al. do not specifically disclose that the sheet has a thickness in the range of 1.5 to 20 microns, the skilled artisan would have appreciated the fact that the thickness of the sheet, such as the 270 mesh polyester screen disclosed by Sato et al., would be dependent upon the diameter of the polyester filaments used to weave the mesh as well as the degree of post-weave calendaring (which is used to cross-weld the weave) that the polyester mesh undergoes after manufacture.

Claim 5 is dependent from claim 1, and so contains all of the recitations of that claim. The patent to Sato entirely fails to teach or even suggest the aspects of claim 5. Claim 5 is believed to be in condition for allowance.

F. Rejection of Claim 6 Has Been Remedied and Should be Withdrawn

Claim 6 was rejected on grounds that:

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,550,660 to Sato et al. in view of U.S. Patent No. 5,819,652 to Utter et al.

Sato et al. disclose a stencil sheet comprising a sheet having a large number of minute perforations (a 270 mesh polyester screen) which are filled with a resin that is soluble in a solvent (column 5, line 60 to column 6, line 9).

Although Sato et al. do not specifically disclose that the stencil sheet further comprises a porous support laminated on one side of the sheet, it would have been obvious to one of ordinary skill in the art at the time of invention to provide the sheet of Sato et al. with a porous support on one side thereof motivated by the fact that Utter et al., also drawn to screen printing devices, disclose that it is known to provide a stencil mask 2 with a porous support (mesh) 10 on one side thereof (Figures 1 and 2; column 2, lines 41-63).

Claim 6 has been amended to recite that one side of a sheet, to which is laminated a porous support, has a large number of minute perforations, and further that the side of the sheet to which is laminated the porous support, bears perforation openings of larger diameter as compared with those on the other side of the sheet. No new matter is added by this amendment since support is found throughout the present application such as at page 16, last line to page 17, line 7, for example.

Neither of the '660 patent to Sato et al. nor the '652 patent to Utter et al., taken singularly or in combination, teach or describe these aspects. For at least these reasons, claim 6 is allowable over the patent to Sato et al. and Utter et al.

Additionally, claim 6 depends from claim 1, which as previously explained, now recites the unique trapezoidal aspects and particular arrangement of the perforations. Neither of the patents to Sato et al. and Utter et al. teach or even suggest these features.

G. Rejection of Claims 15 and 17 should be Withdrawn

The Examiner rejected these claims by asserting:

Claims 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as combined in section (3), above, in view of JP 03-75192 to Tamura.

Although the references as combined in section (3), above, disclose a stencil sheet comprising a synthetic resin film having minute perforations filled with a resin which is soluble in a solvent, they do not specifically disclose that the perforations in the sheet are trapezoidal in vertical cross section.

Nonetheless, it would have been obvious to one of ordinary skill in the art at the time of invention to provide the synthetic resin film resulting from the references as combined in section (3), above, with perforations that are trapezoidal in vertical cross section motivated by the fact that Tamura, also drawn to screen printing devices, disclose that the provision of a screen printing mask (a stencil sheet) with trapezoidal perforations allows materials forced therethrough during printing to be disposed on the substrate in stable deposits without adherence to the walls of the perforations (abstract; Figures 1 and 3).

Claims 15 and 17 depend from claim 2, which as previously noted, depends from amended claim 1. Thus, each of claims 15 and 17 contain all of the recitations of claim 1, as amended, and claim 2. The JP '192 document to Tamura entirely fails to teach or even suggest the unique aspects recited in claims 15 and 17, and particularly, the trapezoidal and arrangement aspects of the perforations as recited in independent amended claim 1. In fact, the JP '192 document to Tamura actually teaches away from the claimed subject matter. Claim 1 recites, in part, that the perforations are arranged such that the diameters are smaller toward the object to be printed. As shown in the figures of the JP '192 document, Tamura adopts an entirely opposite configuration. There, it is shown that the perforations are arranged such that the diameters are larger toward the object to be printed. See also, the abstract of the JP '192 document. For at least these reasons, each of claims 15 and 17 are allowable over the '660 patent to Sato et al. and the JP '192 document to Tamura.

H. Rejection of Claim 18 Should be Withdrawn

The Examiner rejected this claim by contending:

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references as combined in section (3), above, in view of U.S. Patent No. 5,819,652 to Utter et al.

Sato et al. and Rhodes, as combined in section (3), above, disclose a stencil sheet comprising a synthetic resin film sheet having a large number of minute perforations which are filled with a resin that is soluble in a solvent.

Although they do not specifically disclose that the stencil sheet further comprises a porous support laminated on one side of the sheet, it would have been obvious to one of ordinary skill in the art at the time of invention to provide the sheet with a porous support on one side thereof motivated by the fact that Utter et al., also drawn to screen printing devices, disclose that it is known to provide a stencil mask 2 with a porous support (mesh) 10 on one side thereof (Figures 1 and 2; column 2, lines 41-63).

Claim 18 is dependent from claim 2, which in turn is dependent from claim 1. The '652 patent to Utter et al. entirely fails to teach or suggest the aspects of claim 18, and particularly the aspects of amended claim 1 from which claim 18 ultimately depends. Utter et al. entirely fail to teach or even suggest a stencil sheet having the trapezoidal aspect and the particular arrangement as recited in claim 1. For at least these reasons, claim 18 is allowable over the limited teachings of the '660 patent to Sato et al., the '237 patent to Rhodes, and the '652 patent to Utter et al.

I. Claims 7-14, 16 and 19-20 Have Been Cancelled

Although in the last Office Action, the Examiner did not specifically reject claim 16, in view of the amendments to claim 1, that claim has been cancelled.

Claims 7-14 and 19-20 have also been cancelled herein. In view of the Examiner's previous restriction requirement and Applicant's election of the claims for a stencil sheet, Applicant has cancelled the process claims 7-14 and 19-20.¹ Applicant hereby reserves its rights to pursue these and other claims in one or more subsequent applications.

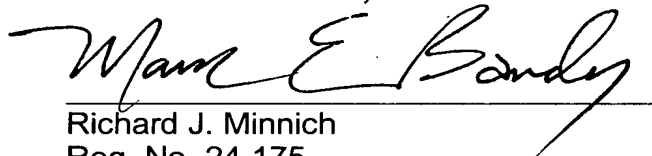
J. Conclusion

In view of the foregoing amendments and remarks, it is believed that claims 1-3, 5-6, 15, and 17-18 are in condition for allowance.

Respectfully submitted,

**FAY, SHARPE, FAGAN,
MINNICH & McKEE, LLP**

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Date



Richard J. Minnich
Reg. No. 24,175
Mark E. Bandy
Reg. No. 35,788
1100 Superior Avenue
7th Floor
Cleveland, Ohio 44114-2579
(216) 861-5582

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¹ Although the Examiner's previous restriction set forth in the Office Action of September 18, 2003 was only with regard to claims 1-6 and 15-18 (group I), and claims 7-13 and 19-20 (group II); it is believed that claim 14, a process claim, should be included in the non-elected group II.